

Drilling Tools FOR CABLE SYSTEM

BARRETT PATENT OIL WELL JACKS
TO TIGHTEN AND LOOSEN THE JOINTS OF DRILLING TOOLS

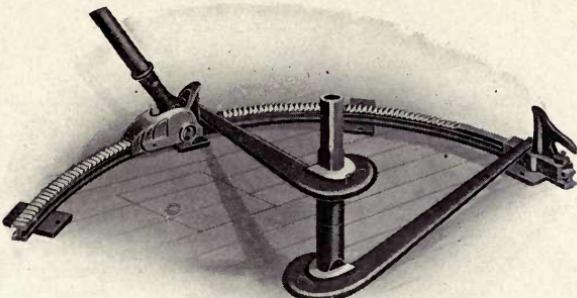


Fig. 132
SHOWING JACK IN OPERATION

No. 1



Fig. 133

Equipped with an improved reversing appliance, by which spring levers are dispensed with; a feature found only in the Barrett jacks.

No. 2

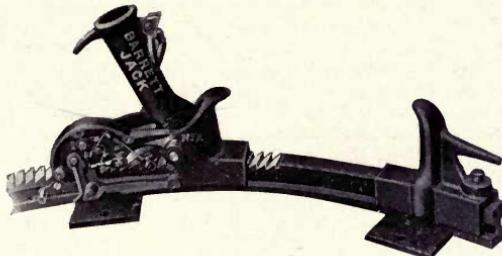


Fig. 134

A powerful, durable and convenient jack. It is the heaviest and strongest of oil well jacks and will give perfect satisfaction.

Size number	1	2
Weight pounds	209	280
Price each	\$65.00	\$90.00

THE ABOVE PRICES INCLUDE WOOD HANDLE.

The Construction of the "Barrett" Jacks

The Barrett Jack combines all the qualities recommended by the Committee on Track Jacks of the Roadmasters' Association, and was specifically endorsed by them.

The movements are easy and positive; the materials used in its construction are the best obtainable.

All Barrett Jacks are constructed of the following materials:

Frame or Base—Malleable Iron.

Rack—Forged Steel, Machine Cut Teeth.

Pawls—Drop Forged Open Hearth Steel of High Carbon.

Fulcrum Pin—High Carbon Rolled Steel, Machined.

Bearings—Hardened Steel.

Handles—Selected Ash or Hickory.

The large rectangular shaped base gives great lifting strength, and permits the Jack to be used in close quarters, affording an advantage over round or bulky bases.

The ribs of the base combine great strength with comparatively light weight.

These Jacks are adapted to high or low set loads by using either the top of the rack or the projecting foot at the lower end.

The working parts are all accurately machine finished, and when worn out can be easily removed and replaced at slight expense.

The Barrett Jack is the best designed, most carefully made, and the safest Jack known to the railroad or industrial world today.

The fact that nearly half a million Barrett Jacks have been placed with American Steam and Street Railways, is sufficient evidence of their worth.

These Jacks can be modified to meet special requirements. We shall be pleased to correspond with anyone in reference thereto.

Barrett Jacks

DOUBLE ACTING
TRIP JACKS

These jacks have a compound, double acting lever, and raise the load one-half a notch on both upward and downward strokes. The load can be instantly dropped from any elevation at will of operator. It is positive, speedy and durable.

No. 1—Track or Trip Jack is the recognized standard track jack and has been adopted by the

leading railroads of America. Its construction conforms strictly to the requirements of the Roadmasters' Association and it was specifically recommended by them in their report of September, 1902.

No. 6—Trip Ballast Gang Track Jack is the most powerful and has the greatest raise of any of the double acting trip jacks.



No. 1—Fig. 648



No. 6—Fig. 649

Jack Number	Capacity, Tons	Height, Bar Down, Inches	Raise of Bar, Inches	Height, Bar Raised, Inches	Size of Bar, Inches	Weight with Lever, Pounds	Price, Each
1	10	24	13½	37½	1½x1½	65	\$18.00
6	15	31	19	50	1½x1¾	110	\$32.00



No. 2—Fig. 650

DOUBLE ACTING
AUTOMATIC LOWERING JACKS

No. 2—Automatic Lowering Jack, is a most popular and useful jack, being suitable for all general lifting purposes. It is the recognized standard for electric street railway lines, being used in track construction, also as a car jack in cases of emergency, such as derailment or accident where cars have to be lifted quickly and lowered gradually. Its operation is easy and simple. The load is moved up or down one-half a notch at each stroke on both upward and downward movements of the lever. The direction is easily controlled by the eccentric at side of the frame. It has no trip, consequently cannot drop a load through carelessness.

Jack Number	Capacity, Tons	Height, Bar Down, Inches	Raise of Bar, Inches	Height, Bar Raised, Inches	Size of Bar, Inches	Weight with Lever, Pounds	Price, Each
2	10	21	10	31	1½x1½	73	\$25.00

Barrett Jacks



No. 3—Fig. 651



No. 4—Fig. 652

DOUBLE ACTING AUTOMATIC LOWERING JACKS

The load is moved up or down one-half a notch at each stroke on both upward and downward movements of the lever. The direction is easily controlled by the eccentric at side of frame. There is no trip, consequently cannot be dropped. These jacks will operate at any angle.

Jack Number	Capacity, Tons	Height, Bar Down, Inches	Raise of Bar, Inches	Height, Bar Raised, Inches	Size of Bar, Inches	Weight with Lever, Pounds	Price, Each
3	12	26 $\frac{1}{2}$	15	41 $\frac{1}{2}$	1 $\frac{1}{4}$ x 1 $\frac{1}{8}$	95	\$30.00
4	15	22	10	32	2 x 2	106	35.00
5	15	28	15	43	2 x 2	124	40.00



No. 5—Fig. 653

No. 3—Automatic Lowering Jack is frequently employed in lifting heavy machinery, and is designed to grapple low set loads and raise them to full range of lift. For general lifting purposes, this is one of the most substantial, efficient and popular jacks ever designed. Will operate at any angle.

No. 4—Automatic Lowering Jack is one of the most substantial and powerful jacks made and is constructed for heavy service. The frame and lifting bar are unusually heavy, with all working parts in proportion. Will operate at any angle.

No. 5—Automatic Lowering Jack, the same as No. 4, with the exception of the height and length of raise.

Barrett Jacks



No. 50—Fig. 654



No. 51—Fig. 655

DOUBLE ACTING AUTOMATIC LOWERING JACKS

No. 50 Jack—This jack covers a wide field of adaptation and is designed for general lifting purposes. It is particularly adapted to the rapid handling of mining machinery, mine cars, agricultural machinery and light or narrow gauge track. It is also suitable for machine shop work and may, in fact, be readily applied to any load within the range of its capacity. This jack is double acting, light in weight and has a quick, positive action.

No. 51 Jack is the same as No. 50 in all respects, except that it stands 5 inches higher. This size has all the features and covers the same purposes as No. 50, but is designed to meet conditions where a higher range of lift is required.

These jacks operate at any angle.

Jack Number	Capacity, Tons	Height, Bar Down, Inches	Raise of Bar, Inches	Height, Bar Raised, Inches	Size of Bar, Inches	Weight with Lever, Pounds	Price, Each
50	5	16	8	24	1 $\frac{1}{2}$ x 1 $\frac{1}{2}$	35	\$16.00
51	5	21	13	34	1 $\frac{1}{4}$ x 1 $\frac{1}{4}$	42	18.00



No. 8—Fig. 656

Barrett Jacks

DOUBLE ACTING AUTOMATIC LOWERING JACKS

No. 8—This jack is popularly known as a car box or journal jack, and is used principally for raising and lowering trucks so as to admit the easy removal and replacing of journal brasses.

It is double acting, the direction being controlled by the eccentric on side of frame. There is no trip. Will operate at any angle.

This jack is made special with extra length of rack for raising electric cars in removing the trucks.

Jack Number	Capacity, Tons	Height, Bar Down, Inches	Raise of Bar, Inches	Height, Bar Raised, Inches	Size of Bar, Inches	Weight with Lever, Pounds	Price, Each
8	10	11	5	16	1 $\frac{1}{8}$ x 1 $\frac{1}{2}$	52	\$22.00

BARRETT PIPE FORCING JACKS

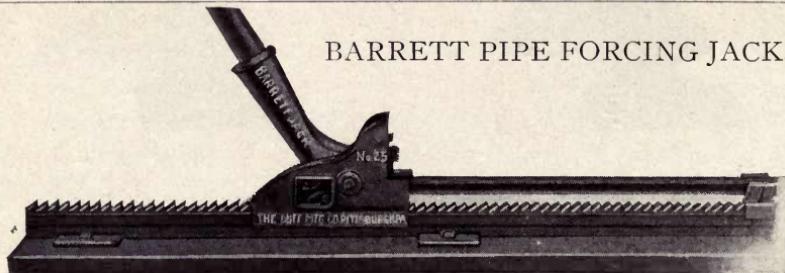


Fig. 657

The Barrett Pipe Forcing Jack represents a special application of the Barrett Jack for forcing pipe horizontally through the ground. It may be used advantageously for forcing pipe under lawns, sidewalks, street crossings, and railway tracks, thereby saving large expense and inconvenience for ditching and replacing.

This jack consists of a cage, which travels on a rack, being moved by a socket lever and pawls. At the front of the cage is a groove and clamp for holding pipe from $\frac{3}{4}$ to 4-inches in diameter. The rack has machine-cut teeth, and is provided with bolts, for bolting to a plank, and also carries two guides for holding pipe in line.

The jack is placed in the ditch and the pipe started in the right direction. When the cage reaches the limit of its travel, it is drawn back to its starting point, and a new section of pipe placed in position. The operation is thus carried on until the desired distance is reached. The front or driving end of the pipe should be provided with a section of pipe one or two feet long, and a size larger than the pipe to be laid. At the front of this section it is best to place a coupling turned to a cutting edge. This will cut its way through all reasonable earth, and remove any sticks or roots the pipe may encounter.

This jack has been thoroughly tested, and has been found that it will pay for itself, in the saving of labor and expense, in a very short time. It is constructed throughout of malleable iron and steel in a substantial manner, and all parts are machine finished. We recommend this jack for forcing sizes of pipe up to 4-inches in diameter.

Jack Number	Capacity, Tons	Total Length, Feet	Travel of Cage, Feet	Weight, Pounds	Price, Each
25	15	8 $\frac{1}{2}$	7 $\frac{1}{2}$	185	\$40.00

Barrett Automobile Jacks



No. 00
Double Acting
Fig. 658



Nos. 08, 06, and 07—Single Acting
(Patents applied for)
Fig. 659



No. 24—Automatic Lowering
Jack—Single Acting
(Patents applied for)
Fig. 660

No. 00 Jack is double acting, raising the load on both the upward and downward strokes of the lever, and lowers the load in the same manner, by simply turning the eccentric at the side. Its height, raise of lifting bar, and curved top are designed to meet automobile requirements, and by means of the foot it can grapple low-set loads with greatest facility. This jack operates at any angle.

No. 08 Jack is single acting, that is, raises on the downward stroke of the lever only. It contains our new reversing lever for controlling the direction, up or down. This improved reversing lever working at the front of the jack, displaces the former eccentric, or thumb screw, at the side of the frame on previous models. This method of reversing the jack is much handier and permits the operator to reverse the jack without reaching through the spokes of the wheel or far under the body of the car to reverse, as previously. The new reversing lever at the front of the jack on these models, may be easily thrown up or down with the jack handle without any inconvenience, or may be thrown up or down without reaching. This feature is found only in the Genuine Barrett Automobile Jacks and patents covering are pending.

No. 06 Jack—Same as No. 08 above described, except that it stands 10-inches high with a raise of 5-inches.

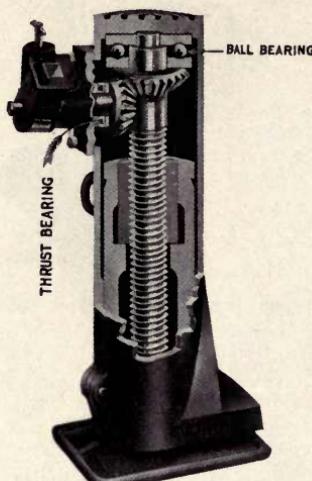
No. 07 Jack—Same as No. 08 above described, except that it stands 8-inches high with a raise of 5-inches.

No. 24 Motor Truck Jack is heavier than the regular automobile sizes, and was designed for the rapid and safe handling of commercial trucks and vehicles. It has a capacity of $2\frac{1}{2}$ tons, and is extremely popular for this work, as it is convenient, and light in weight. It is equipped with improved reversing lever at the front of the jack which may be easily thrown up or down to raise or lower the jack at the will of the operator.

Jack Number	Capacity, Tons	Height, Bar Down, Inches	Raise of Bar, Inches	Height, Bar Raised, Inches	Weight with Lever, Pounds	Price, Each
00	1	12	6	18	8 $\frac{1}{2}$	\$3.50
*08	1	11	6	17	9 $\frac{1}{2}$	3.50
06	1	10	5	15	8 $\frac{1}{2}$	3.50
*07	1	8	5	13	7	3.50
24	2 $\frac{1}{2}$	11 $\frac{1}{4}$	5 $\frac{1}{2}$	16 $\frac{1}{4}$	14	6.00

*Not carried in stock but can be furnished on special orders for eastern shipment.

Ball Bearing Geared Ratchet Screw Jacks



Sectional Cut Ball Bearing Geared Ratchet Screw Jack Fig. 661



No. 60—Fig. 662



No. 61—Fig. 663

Fig. 661 shows the construction of the Ball Bearing Geared Ratchet Screw Jacks. They are made entirely of refined malleable iron and steel. All gears are from high carbon steel, drop forged, and have machine-cut teeth.

The ratchet is of special construction, involving very few parts. It consists of a malleable iron cage surrounding the ratchet wheel on the shaft. Within this cage is a tool steel pawl pin which engages the teeth of the ratchet. The direction is changed by pulling this pin out and turning it half way round. This allows the pin to engage the ratchet in opposite direction.

The ball bearings used are the best of their kind and consist of two hardened, ground tool steel plates, each having a groove in which roll large alloy steel balls. These balls are carried in a bronze cage, each ball in a space by itself, thus eliminating all friction between the balls. This form of bearing is the most durable, most substantial, and most economical on the market.

The No. 60 Ball Bearing Geared Ratchet Screw Jack is adapted to bridge work and all general lifting purposes within the range of its capacity, and has a lifting toe by which low-set loads can be readily handled. The full rated capacity may be lifted on the top of the jack or one-half the rated capacity on the toe.

The No. 66 Jack is the same as No. 60, except it stands only 22-inches high and has a raise of only 10-inches.

The No. 61 Ball Bearing Geared Ratchet Screw Jack is adapted for all around work in repair shops, yards, bridge work, or for handling structural material. This Jack also covers the requirements of industrial concerns, contractors, trucking companies, in and around mills, factories, and machine shops. It has a lifting toe by which low-set loads can be readily handled. The full rated capacity may be lifted on the top of the jack or one-half the rated capacity on the toe.

The No. 67 Jack is the same as No. 61, except it stands only 22-inches high and has a raise of only 10-inches.

Jack Number	Capacity, Tons	Height, Inches	Raise, Inches	Size of Base, Inches	Diameter of Head, Inches	Weight with Lever, Pounds	Price, Each
*60	15	26	13	5x 9	5	132	\$70.00
66	15	22	10	5x 9	5	120	60.00
*61	25	27	13	8x11	6	196	96.00
67	25	22	10	8x11	6	167	90.00

These jacks are regularly equipped with the improved ball bearing, but may be equipped with an interchangeable roller bearing, on special orders, if desired, the dimensions and prices being the same.

*Carried in stock.

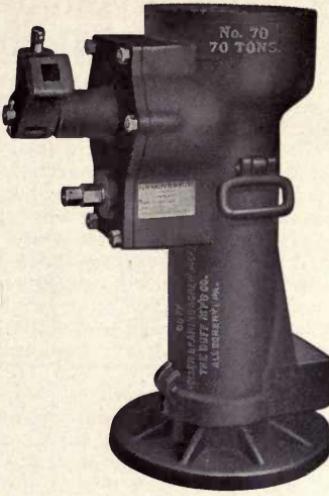
Ball Bearing Geared Ratchet Screw Jacks



No. 62—Fig. 664



No. 64—Fig. 665



No. 70—Fig. 666

The No. 62 Ball Bearing Geared Ratchet Screw Jack is adapted for extra heavy work of any character, including bridge, car or repair work. It will be found to meet every requirement. The full rated capacity may be lifted on the top of the jack or one-half the rated capacity on the toe.

The No. 68 Jack is the same as No. 62, except it stands only 22 inches high and has a raise of only 10 inches.

The No. 63 Ball Bearing Geared Ratchet Screw Jack is a modified form of the No. 61, and because of its height and raise, it is especially adapted to car work, requiring no blocking in order to raise any freight car or passenger coach.

The Nos. 81, 82, 83 and 84 Jacks differ from No. 63 only in height and in raise.

The No. 64 Ball Bearing Geared Ratchet Screw Jack has a round base, 14 inches in diameter and strongly ribbed. It is designed for heavy work.

The Nos. 65 and 69 Jacks differ from No. 64 only in height and in raise.

The No. 70 Ball Bearing Geared Ratchet Screw Jack contains a double set of gears and two shafts for operating by which a heavy load is more easily raised. All gears are forged steel, with machine cut teeth. For heavy lifting work these jacks are more reliable, more economical, more efficient and less troublesome than any other type of screw jack.

Nos. 81, 82, 83,
and 84 Fig. 667

Jack Number	Capacity, Tons	Height, Inches	Raise, Inches	Size of Base, Inches	Diameter of Head, Inches	Weight with Lever, Pounds	Price, Each	Hook Extra, Each
*62	35	26	13	9x10 $\frac{1}{2}$	6 $\frac{1}{2}$	250	\$138.00
68	35	22	10	9x10 $\frac{1}{2}$	6 $\frac{1}{2}$	220	130.00
63	25	36	23	12	6	230	100.00	\$8.00
81	25	20	9	10	6	141	80.00	6.00
82	25	24	11	11	6	159	85.00	6.00
83	25	26	13	12	6	180	90.00	7.00
84	25	30	17	12	6	200	95.00	8.00
*64	50	27	13	14	10 $\frac{1}{2}$	320	150.00
65	50	24	9	14	10 $\frac{1}{2}$	270	150.00
69	50	20	5	14	10 $\frac{1}{2}$	250	150.00
*70	70	27	13	14	10 $\frac{1}{2}$	370	200.00

These jacks are regularly equipped with the improved ball bearing, but may be equipped with an interchangeable roller bearing, on special orders, if desired, the dimensions and prices being the same.

*Carried in stock.

Special Features of Merit and Advantage of Duff-Bethlehem Hydraulic Jacks

Strength—On account of the forged steel construction, all sizes of jacks are capable of withstanding an enormous overload and contain a greater factor of safety than any other jack.

Weight—All sizes are from 30 per cent. to 60 per cent. lighter than any other jacks of equal lifting capacity.

Piston—Height, when down, is less than in any other design. The ram will run out full lift in either vertical, inclined or horizontal position.

Tripping—Both valves are opened positively by slight pressure on the lever when the same is reversed, causing the load to be lowered. This may be regulated as slowly as required, or stopped at any point by varying the pressure.

Pump—The Telescope, or low type, is the only jack having a pumping stroke on both the upward and downward motion of the lever, automatically reducing the speed with a heavy load and increasing with a light load, to meet the varying conditions.

The "Duff-Bethlehem" Duplex Pump Jacks have a greater ratio between the small and the large pump pistons than any other design.

Accessibility—The valves can be attended to without removing the packing, and the packing without removing the valves.

Material—Open hearth fluid compressed forged steel and bronze are used throughout to secure lightness and strength. Inside working parts are drop forgings.

Construction—Both cylinder and ram have solid bottom, thus packing is required only for ram and pump piston. Axis of pump stroke coincides with that of pump well, insuring uniform wearing of pump packing. Flexible cup packing is used for both pump and ram. The Automatic valveless air vent allows free flow of air into and from reservoir of jack, and effectually prevents flow of filling liquid from reservoir when the jack is placed in horizontal position.

The two most troublesome packings and joints in all other hydraulic jacks are ENTIRELY ELIMINATED in the Duff-Bethlehem Jacks.

These jacks cannot "creep" under a load, as all possibility of leakage is eliminated in construction. They are always ready for instant service, are not troublesome, and practically cost nothing to maintain and to keep in constant operation.

General Instructions For Operating Duff-Bethlehem Hydraulic Jacks

1—To fill reservoir with liquid: Push the ram down to lowest position, remove the filling plug in the top of the head and fill, for summer use, with one part grain alcohol and four parts clear water. For winter use, two parts alcohol and three parts clear water. To either mixture add one ounce of sperm oil.

2—Keep the ram in lowered position when not in use.

3—Never fill with wood alcohol, kerosene, or water, and be very careful that dirt or foreign matter of any kind does not get into the head while filling.

4—Should the valves not operate freely, the trouble may be remedied by striking the lever a few sharp blows up and down.

5—If, when using, the liquid comes out over the top of the cylinder, or through the vent-hole, the ram packing is too loose and it should be tightened by setting up on the ram nut, or the edges may be spread by lightly hammering the packing, unless the same is worn out, in which case new packing is required.

6—If, when pumping, the ram does not rise, there is either something under the valves, or the pump packing is too loose.

7—If, when pumping, or under pressure, the lever rises, when the hand is removed, there is something under the discharge valve, or the seat is cut. Observe Rule 4 for the former. Regrind the valve and seat for the latter.

8—Be sure and wash all parts of the jack with clean water if same has been taken apart and is being reassembled.

9—The air vent in the filling plug requires practically no attention, as a sponge automatically fulfills the necessary functions. Fitting of a new sponge is easily made by unscrewing cap in the plug.

Duff-Bethlehem Forged Steel "Broad Base" Hydraulic Jacks

The broad base of this type of jack gives a solid foundation. These jacks are used principally for railroad work in machine, car and locomotive shops.

The broad base is a solid steel forging, forged integrally with the cylinder. These jacks are considerably lighter in weight than any other make of hydraulic jack, made possible by the use of forgings throughout. They also have greater lifting capacity, are much stronger and more durable than other hydraulic jacks and cost practically nothing to maintain.

These jacks work in either a vertical, horizontal or inclined position.



Fig. 668

Symbol	Capacity, Tons	Runout in Inches	Height, Inches	Diameter Base, Inches	Weight, Pounds	Price, Each
H	10	12	22 $\frac{1}{4}$	11	80	\$ 78.00
HH	10	18	28 $\frac{1}{2}$	11	90	90.00
J	15	12	22 $\frac{1}{2}$	11	100	100.00
JJ	15	18	29 $\frac{1}{2}$	11	114	120.00
K	20	9	20 $\frac{1}{2}$	12	106	110.00
KK	20	12	23 $\frac{1}{2}$	12	114	120.00
*KKK	20	18	29 $\frac{1}{2}$	12	126	140.00
L	30	9	21 $\frac{1}{2}$	12	124	135.00
LL	30	12	24 $\frac{1}{2}$	12	135	150.00
LLL	30	18	30 $\frac{1}{2}$	12	150	175.00
M	40	9	21 $\frac{1}{2}$	12	129	165.00
MM	40	12	24 $\frac{1}{2}$	12	141	180.00
MMM	40	18	30 $\frac{1}{2}$	12	160	220.00
P	50	12	26 $\frac{1}{2}$	13	190	210.00
*PP	50	18	33 $\frac{1}{2}$	13	212	260.00
R	60	12	27	14	230	290.00
RR	60	18	33 $\frac{1}{2}$	14	253	350.00

*Carried in stock.

Duff-Bethlehem Forged Steel "Fixed Claw" Hydraulic Jacks

This type of jack is used principally in machine shops and where there is not sufficient room to get the head of the jack underneath the load.

The claw, or toe piece, is a drop forging, a feature found only in Duff-Bethlehem Jacks, and it will stand the full rated capacity of the jack. These jacks work in either a vertical, horizontal or inclined position.

Symbol	Capacity, Tons	Runout in Inches	Height, Inches	Diameter Base, Inches	Weight, Pounds	Price, Each
BX	15	12	22 $\frac{1}{4}$	6 $\frac{1}{2}$	105	\$125.00
*BBX	15	18	28 $\frac{1}{2}$	6 $\frac{1}{2}$	132	140.00
CX	20	9	19 $\frac{1}{2}$	7 $\frac{1}{2}$	140	145.00
CCX	20	12	22 $\frac{1}{2}$	7 $\frac{1}{2}$	160	165.00
CXX	20	18	29	7 $\frac{1}{2}$	180	185.00
DX	30	9	21	8	195	185.00
DDX	30	12	24	8	210	210.00
DXX	30	18	30	8	240	245.00
EX	40	12	24 $\frac{1}{2}$	8	217	250.00
EEX	40	18	30 $\frac{1}{2}$	8	250	280.00
FX	50	12	26 $\frac{1}{2}$	8 $\frac{1}{2}$	270	280.00
FFX	50	18	33 $\frac{1}{2}$	8 $\frac{1}{2}$	300	340.00

*Carried in stock.



Fig. 669

Duff-Bethlehem Forged Steel "Low Type" or Telescope Hydraulic Jacks

FOR A VERTICAL OR HORIZONTAL LIFT, FITTED WITH AN IMPROVED
DUPLEX PUMP AND ARRANGED TO USE A DROP
FORGED STEEL INDEPENDENT CLAW



"Low" or Telescope Jack—Closed
Fig. 670



"Low" or Telescope Jack—Extended
Fig. 671

These jacks are the highest grade hydraulic jacks that have ever been developed, and for heavy lifting are the most economical, efficient, and positive on the market. In design, construction, and workmanship they have no equal. These jacks are used where a low jack is required with a long lift. On account of their forged steel construction, they are from 30 per cent. to 80 per cent. lighter in weight than any other hydraulic jack on the market of equal capacity and stroke. They are also more powerful, more durable, and much more economical than any other make of jack. The valves are absolutely positive. On account of their forged steel construction, the bottom of the ram and bottom of the cylinder are solid, dispensing with packings and joints which are bound to appear on every other make of jack and which cause great trouble and expense.

On the 30-ton and 40-ton sizes the pump is single-acting, and on all other sizes from 50-tons to 250-tons, inclusive, an improved double-acting pump is used, automatically regulating the change of speed proportional with the load being lifted.

An important feature of these jacks is that for one-half of their run out their capacity is double their rated capacity.

These jacks work in either vertical, horizontal or inclined position.

Symbol	Capacity, Tons	Runout in Inches	Height Closed, Inches	Diameter Base, Inches	Weight, Pounds	Price, Each
DK	30	12	18 $\frac{1}{4}$	10	195	\$170.00
DKK	30	18	21 $\frac{1}{2}$	10	200	200.00
DL	40	12	18 $\frac{1}{4}$	10	200	200.00
DLL	40	18	21 $\frac{1}{4}$	10	220	240.00
DM	50	12	17 $\frac{1}{4}$	9 $\frac{1}{2}$	230	225.00
DMM	50	18	20 $\frac{1}{4}$	9 $\frac{1}{2}$	250	265.00
DO	60	12	17 $\frac{1}{2}$	9 $\frac{1}{2}$	230	235.00
DOO	60	18	22 $\frac{1}{2}$	9 $\frac{1}{2}$	280	290.00
DP	80	9	17 $\frac{1}{4}$	10 $\frac{1}{2}$	278	270.00
DPP	80	12	18 $\frac{1}{2}$	10 $\frac{1}{2}$	340	285.00
DDP	80	18	21 $\frac{1}{2}$	10 $\frac{1}{2}$	400	340.00
DS	100	9	17 $\frac{1}{4}$	12	425	320.00
*DSS	100	12	19 $\frac{1}{2}$	12	460	340.00
**DDS	100	18	23 $\frac{1}{2}$	12	510	415.00
DT	125	12	20	13 $\frac{1}{2}$	500	400.00
DTT	125	18	23	13 $\frac{1}{2}$	530	460.00
DV	150	9	18 $\frac{1}{2}$	14 $\frac{1}{2}$	570	430.00
DVV	150	12	20	14 $\frac{1}{2}$	530	450.00
DY	200	9	19	15 $\frac{1}{2}$	600	490.00
DYY	200	12	20 $\frac{1}{2}$	15 $\frac{1}{2}$	650	520.00
DZ	250	9	19 $\frac{1}{2}$	18	700	610.00
DZZ	250	12	21	18	760	650.00
DDZ	250	18	24	18	950	800.00

All of the above Jacks are fitted to use an Independent Claw if desired. Prices upon application.
*Carried in stock.

Duff-Bethlehem
Forged Steel "Low Journal Box"
Hydraulic Jacks



Fig. 672

These jacks are made with a 5-inch stroke and are only 10 inches over all in height, and are used for removing the brasses by car inspectors.

These jacks work in either vertical, horizontal or inclined position.

Symbol	Capacity, Tons	Runout in Inches	Height Closed, Inches	Diameter Base, Inches	Weight, Pounds	Price, Each
AJ	10	5	10	7	49	\$ 75.00
BJ	15	5	10	7½	53	95.00
CJ	25	5	10	8	75	115.00